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AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (currently amended): A spectrophotometer to analyze an article to be measured, the spectrophotometer comprising:

(a) light emission means that emits light onto the article to be measured;

(b) a light-dispersing spectrometer receiving light from the article;

(c) a main light reception unit ~~having~~ including a group of charge accumulation type photodetection-element pixels ~~elements~~ which receive, for [[each]] various wavelengths or wavelength bands of [[,]] ~~among~~ light emitted from the light emission means, ~~incoming~~ light ~~after the light~~ that has been transmitted through [[an]] the article to be measured and has been spectrally separated by [[a]] the spectrometer ~~such as a diffraction grating;~~ and ~~which~~ wherein the photodetection-element pixels convert the light into an amount of charge to be accumulated;

(d) a sample-use light reception unit for accumulating, in the form of an amount of charge, a portion of said incoming light simultaneously with said main light reception unit ~~that has been spectrally separated~~ and reading the charge of a specified wavelength or specified wavelength band of said incoming light;

(e) an analogue circuit unit further comprising:

a pre-amplifier and drive circuit [[of]] coupled to said main light reception unit and sample-use light reception unit;

a variable-gain type amplification circuit whose gain can be varied by a digital instruction; and

a zero-point compensation circuit, provided in the vicinity of at least [[the]] a final stage of [[an]] said analogue circuit unit, ~~for sequentially acquiring~~ to sequentially acquire the zero-point of all the amplification ~~systems~~ circuits immediately prior to sequential reading of the charge accumulated on the pixels of said main light reception unit and sample-use light reception unit; [[and]]

(f) an A/D converter, coupled to the analogue circuit unit, for converting the analogue voltage from the zero-point compensation circuit to a digital value; ~~and further comprising~~

(g) digital comparison operation means that, in reading the charge accumulated on said main light reception unit and sample-use light reception unit during measurement,

first of all amplifies the analogue voltage from said sample-use reception unit in said variable-gain type amplification circuit that is set to a low gain at which ~~obviously the~~ an expected maximum point of the wavelength characteristic of a specified wavelength or specified wavelength band is not saturated, and

then, after the amplified analogue voltage has passed through said zero-point compensation circuit, subjects the [[same]] analogue voltage to A/D conversion in said A/D converter, and

performs a digital comparison operation of the digitally converted digital value with a predetermined reference value, which is finally obtained by being read from said main light reception unit, and which is predetermined as an optimum value such that there is no possibility of the maximum point of the wavelength characteristic at [[the]] a required wavelength or wavelength band being saturated, and such that the number of significant digits of the digital value is not reduced;

(h) gain setting means for setting the gain of said variable gain type amplification circuit in accordance with [[the]] an operation result from the digital comparison operation means; and

(i) digital data reading means for acquiring a wavelength characteristic by sequentially reading the group of charges accumulated on said main light reception unit as digital data, in ~~pixel units,~~ the pixels, through said pre-amplifier and drive circuit, said variable gain type amplification circuit, said zero-point compensation circuit and said A/D converter after setting the gain in said variable-gain type amplification circuit by the gain setting means.

2. (currently amended): The spectrophotometer according to claim 1,

wherein said spectrometer comprises a diffraction grating, and wherein [[, as]] said sample-use light reception unit [[,]] includes an optical input window that is arranged in an optical region in a specified order of a diffraction grating for light incident of a specified wavelength in the vicinity of the maximum value of the light transmission amount characteristic of the article to be measured; and comprising means for guiding light by an optical fiber to the vicinity of a pixel position at the start of reading of a group of said charge accumulation type photodetection element pixels, or a photodiode or photodiode array that is arranged in the position of an optical input window in an optical region of a specified order of [[a]] said diffraction grating.

3. (currently amended): The spectrophotometer according to claim 1,

wherein the amount of light transmitted is expressed as: mantissa × exponent, where the digital value of said A/D converter represents the mantissa, said variable-gain type amplification circuit is an exponential type amplification circuit, ~~is employed for said variable-gain type~~

~~amplification circuit, the value of said A/D converter representing the mantissa and~~ the maximum set gain thereof being the base, the exponent thereof being the set value, and said gain of said variable gain type exponential amplification circuit representing the exponent. ~~(the maximum gain of the circuit being the base and the exponent thereof being the set value).~~

4. (original): The spectrophotometer according to claim 1,

wherein, during the reading of said main light reception unit, when performing comparison operation of the value obtained by said sample-use light reception unit with the reference value, computation is performed including a pixel unit correction function, and gain correction in the pixel units is performed by successively setting said operation results in the said variable-gain type amplification circuit as all the pixels are read.

5. (new): The spectrophotometer according to claim 1, wherein the article to be measured is disposed between the light emission means and the spectrometer.

6. (new): The spectrophotometer according to claim 5, wherein the spectrometer comprises a diffraction grating.

7. (new): The spectrophotometer according to claim 1, wherein the light from the light emission means is not chopped.

8. (new): The spectrophotometer according to claim 1, wherein each of the photodetection-element pixels corresponds to a respective specified wavelength or specified wavelength band of said incoming light.

9. (new): The spectrophotometer according to claim 1, comprising a first pre-amplifier and drive circuit coupled to said main light reception unit and a second pre-amplifier and drive circuit coupled to said sample-use light reception unit.